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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* LENRICK JOHNSTON

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Appeal 2016-007067  
Application 13/444,779  
Technology Center 3600

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Before ROBERT E. NAPPI, SCOTT E. BAIN, and  
JASON M. REPKO, *Administrative Patent Judges*.

REPKO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant<sup>1</sup> appeals under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 4–7, and 10–19. Br. 2.<sup>2</sup> Claims 2, 3, 8, and 9 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

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<sup>1</sup> Appellant identifies the real party in interest as Bioproduction Group, Inc. Br. 2.

<sup>2</sup> Throughout this opinion, we refer to (1) the Final Rejection (“Final Act.”) mailed April 23, 2015, (2) the Appeal Brief (“Br.”) filed December 21, 2015, and (3) the Examiner’s Answer (“Ans.”) mailed May 6, 2016. The Appeal Brief does not contain page numbers but we refer to the pages in order starting from the signed cover page.

## THE INVENTION

Appellant's invention publishes and updates feasible finite schedules. Spec. ¶¶ 1, 9. Finite scheduling is a constraint-based scheduling method used by businesses to plan activities and resource use. *Id.* ¶ 2. A "feasible" schedule is one that allocates tasks to resources in a way that does not break the rules for a resource's or machine's operation. *Id.* ¶ 9. In one example, a finite schedule is an allocation of cars to carwash machines. *Id.* ¶ 50. In this example, the schedule is feasible when neither machine is washing two cars at the same time. *Id.* ¶ 52.

Claim 1 is reproduced below:

1. A computer implemented method for real-time publishing of a feasible finite schedule comprising a plurality of activities and a plurality of resources, the method comprising the steps of:

(a) deriving at least one master schedule  $a$ ,  $a=1 \dots A$  from an output of a finite schedule, the at least one master schedule comprising at least one master activity instance  $i_a$ ,  $i_a=1 \dots I_a$  associated therewith;

(b) providing at least one published schedule  $b$ ,  $b=1 \dots B$  associated with the at least one master schedule  $a$ , the at least one published schedule  $b$  including at least one published activity instance  $i_b$ ,  $i_b=1 \dots I_b$  associated therewith;

(c) creating a schedule mapping table to store at least one relationship between the at least one master schedule  $a$  and the at least one published schedule  $b$ ;

(d) creating an activity instance mapping table for the at least one master schedule  $a$ , the activity instance mapping table including at least one unique identifier to map the at least one master activity instance  $i_a$  and the at least one published activity instance  $i_b$  in the at least one master schedule  $a$  and the at least one published schedule  $b$ ;

(e) defining at least one property  $p$ ,  $p=1 \dots P$  for the at least one master activity instance  $i_a$  and the at least one published activity instance  $i_b$ ;

(f) iterating over each of the at least one master schedule  $a$ ,  $a=1 \dots A$  and determining the existence of the at least one published schedule  $b$  by checking the schedule mapping table;

(g) creating a new published schedule if the at least one published schedule  $b$  does not exist in the schedule mapping table;

(h) iterating over each of the at least one master activity instance  $i_a$  and iterating over each of the at least one published schedule  $b$  to determine if the at least one published activity instance  $i_b$  exists in the at least one published schedule  $b$  by checking the activity instance mapping table;

(i) creating a new published activity instance if the at least one published activity instance  $i_b$  does not exist in the at least one published schedule  $b$  and storing an entry  $i_a/i_b$  in the activity instance mapping table for the at least one published schedule  $b$ ;

(j) iterating over each of the at least one property  $p$ ,  $p=1 \dots P$  for determining if the at least one property of the at least one master activity instance  $i_a$  matches with the at least one published activity instance  $i_b$ ;

(k) altering the at least one published schedule  $b$ , the at least one published activity instance  $i_b$  and the at least one property  $p$  to match with the at least one master schedule  $a$  and registering an entry  $i_a/i_b$  in the activity instance mapping table as not valid if the at least one property  $p$  of the at least one master activity instance  $i_a$  does not match with the at least one published activity instance  $i_b$ ; and

(l) registering the entry  $i_a/i_b$  in the activity instance mapping table as valid if the at least one property  $p$  of the at least one master activity instance  $i_a$  matches with the at least one published activity instance  $i_b$ ;

whereby the at least one master schedule is adaptable to communicate with devices including but not limited to a computer, a smart phone, a mobile phone and a mechanism adaptable to view the at least one master schedule utilizing E-mail/Calendar platforms.

#### THE REJECTIONS

The Examiner relies on the following as evidence:

Lyle et al.                      US 2008/0091504 A1                      Apr. 17, 2008

Claims 1, 4–7, and 10–19 stand rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Ans. 3–5.

Claims 1, 4–7, and 10–19 stand rejected under 35 U.S.C. § 102(b) as anticipated by Lyle. Ans. 5–13.

#### THE REJECTION UNDER 35 U.S.C. § 101

##### *Independent claims 1, 7, 13, and 19*

The Examiner rejects claims 1, 7,<sup>3</sup> 13, and 19 under 35 U.S.C. § 101 because the claims as a whole (1) are directed to an abstract idea and (2) do not contain an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application. Ans. 3–5. For the reasons discussed below, Appellant has not persuaded us of error.

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<sup>3</sup> Claim 7 in the Claims Appendix contains a strikethrough in step (k): “~~is~~ does”. Br. 29. Because the amendment deleting this text has been entered (*see, e.g.*, Final Act. 3), we treat the word “is” as deleted from claim 7 for the purposes of this appeal.

I

The Supreme Court’s two-step framework guides our analysis. *See Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

According to step one, “[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept,” such as an abstract idea. *Id.*

Appellant argues that the invention includes a system compatible to work with other devices and is not directed to an abstract idea. Br. 10. According to Appellant, this system requires an algorithm and not merely a generic computer. *Id.* at 10–11.

We, however, agree with the Examiner that the claims are directed to an abstract idea of creating a schedule. Ans. 4.

The Specification underscores the abstract nature of the idea in the claims. In particular, the claimed algorithm solves the problem of allocating tasks to resources according to rules. Spec. ¶ 9. For example, one embodiment allocates cars to carwash machines so that no machine is washing two cars at the same time. *Id.* ¶¶ 50, 52. The Specification explains that this constraint-based scheduling is used by businesses to plan activities and resource use. *Id.* ¶ 2. Yet, businesses have engaged in this type of activity well before computers.

Although Appellant’s algorithm is implemented on a computer, the computer only accelerates what could otherwise be performed by a human carrying out the steps manually and mentally. Specifically, claims 1, 7, 13, and 19 are directed to algorithms for determining and publishing the schedule. The claimed algorithms use a “master schedule,” “published schedule,” “properties,” “activity instances,” as well as tables to store the

relationship between this data. But a computer is not required to maintain the tables and other data. Rather, the diagrams shown in Figures 5 through 7J could represent this data on paper and still allow a person to follow the recited steps—e.g., by creating, iterating over, and altering human-transcribed information. *See id.* ¶¶ 48–55 (describing the Figures).

To be sure, the claims recite that the master schedule is “adaptable to communicate with devices,” as Appellant points out. *See* Br. 10–11. But this feature does not change the claims’ character as a whole, which we must look to in determining whether the claims are “directed to” excluded subject matter in step one of the *Alice* framework. *See Affinity Labs of Tex., LLC v. DirecTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016). Rather, the claims, as a whole, can be understood as simply adding conventional computer components—i.e., networked devices—to a manually executable algorithm.

The Federal Circuit has recognized that similar manual and mental processes are “directed to” abstract ideas. *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“[C]omputational methods which can be performed entirely in the human mind are the types of methods that embody the ‘basic tools of scientific and technological work’ that are free to all men and reserved exclusively to none.”) (citation omitted); *Mortgage Grader, Inc. v. First Choice Loan Servs.*, 811 F.3d 1314, 1324 (Fed. Cir. 2016) (concluding that the claim was directed to an abstract idea and explaining that “[t]he series of steps covered by the asserted claims . . . could all be performed by humans without a computer.”). Overall, the focus of claims 1, 7, 13, and 19 is not on “an improvement in computers as tools,” unlike claims that the Federal Circuit has found eligible under § 101. *See Elec. Power Grp., LLC v. Alstom S.A.*,

830 F.3d 1350, 1354 (Fed. Cir. 2016) (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016)). Rather, the focus of the claims here is on an independently abstract idea that uses a computer as a tool, like those claims that the Federal Circuit has found to be ineligible. *See Elec. Power*, 830 F.3d at 1354.

On this record, we are unpersuaded that the Examiner erred in concluding that claims 1, 7, 13, and 19 are directed to an abstract idea.

## II

Because the claims are “directed to an abstract idea,” we analyze the claims to determine if the limitations, when considered both “individually and as an ordered combination” contain an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application. *Alice*, 134 S. Ct. at 2355–58.

Appellant argues that the claimed method resides in a computer, which typically has a processor, control unit, a readable medium, storage units, as well as input and output devices. Br. 11. According to Appellant, the method creates a published schedule that uses the master schedule as a reference, which is non-trivial and requires computer hardware. *Id.* Appellant further argues that the method stores entries in a mapping table, which requires a storage unit. *Id.* at 12. In Appellant’s view, the method requires a computer for speed and accuracy and this amounts to significantly more than data transcription using a generic computer. *Id.* at 12–13. Appellant explains that the method requires “a high-speed processor” to perform multiple activities dynamically and simultaneously. *Id.*

But there is no indication that the identified components (*id.* at 11–13) produce “a result that overrides the routine and conventional” use of their



known features. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1258 (Fed. Cir. 2014). Indeed, the Federal Circuit has distinguished between claims that “merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet” and claims that are “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *Id.* at 1257. The claims here are more like the former.

Specifically, considering the claimed method steps individually, the function performed by the computer at each step of the process is purely conventional. Unlike the improvement to three-dimensional animation in *McRO, Inc. v. Bandai Namco Games Am.*, 837 F.3d 1299, 1315 (Fed. Cir. 2016), Appellant does not point to a technical advance or improvement. *See* Br. 11–13.

Rather, the claimed method merely uses a processor to accelerate the calculations. To be sure, a computer likely iterates over the schedules faster than a human can review them. But, even if a “high-speed processor” performs multiple calculations in the claimed method dynamically and simultaneously (*id.* at 12–13), this use of a computer is well-known and routine. *See Bancorp Servs., LLC v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (“The computer required by some of Bancorp’s claims is employed only for its most basic function, the performance of repetitive calculations, and as such does not impose meaningful limits on the scope of those claims.”).

The same is true for using a storage unit to store data in a mapping table. *See* Br. 12. Storing data is “one of the most basic functions of a computer.” *Alice*, 134 S. Ct. at 2359.

Lastly, we note that, although the recited master schedule is adapted to communicate with devices (Br. 10–11), the computer’s role in communicating, as broadly claimed here, does not add an “inventive concept” under step two of the *Alice* framework. *See buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (explaining that “computers in *Alice* were receiving and sending information over networks connecting the intermediary to the other institutions involved, and the Court found the claimed role of the computers insufficient.”). In sum, the claimed steps, considered individually, do not contain an inventive concept.

Considering the limitations as an ordered combination, the computer involvement in the claimed method adds nothing that is not already present when the steps are considered individually. Like those considered in *Alice*, claims 1, 7, 13, and 19 “amount to ‘nothing significantly more’ than an instruction to apply the abstract idea” using a generic computer. 134 S. Ct. at 2360. Claim 19, in particular, merely recites a system for performing the method, which is insufficient. *See id.*

Therefore, Appellant has not persuaded us of error in the rejection of independent claims 1, 7, 13, and 19 under 35 U.S.C. § 101.

We sustain the Examiner’s rejection of claims 1, 7, 13, and 19 under § 101.

*The Dependent Claims*

Appellant does not argue dependent claims 4–6, 10–12, and 14–18 separately with particularity. Instead, Appellant relies on the arguments presented for the independent claims. *See* Br. 13 (“For at least these reasons, the Applicant respectfully submits that Independent Claims 1, 7, 13 and 19, *as well as all claims dependent from them* are currently directed to statutory subject matter and not an abstract idea under 35 U.S.C. § 101.”) (emphasis added). Accordingly, we find Appellant’s arguments unpersuasive for the reasons previously discussed.

We sustain the Examiner’s rejection of claims 4–6, 10–12, and 14–18 under § 101.

THE ANTICIPATION REJECTION

The disputed limitation of claims 1, 7, 13, and 19 recites, in part, in step (k), “registering an entry  $i_a/i_b$  in the activity instance mapping table as not valid if the at least one property  $p \dots$  does not match with the at least one published activity instance  $i_b$ ” and, in step (l), registering the entry as “valid” if a property matches. The matches recited in steps (k) and (l) are determined by iterating over the properties in step (j).

The Examiner finds Lyle discloses every recited element of claims 1, 7, 13, and 19. Ans. 6–12. According to the Examiner, Lyle performs the recited iteration and registration in steps (j), (k), and (l) when determining a conflict between scheduled calendar events. *See id.* at 10 (citing Lyle ¶ 10); *see also id.* at 11–13.

Appellant argues that Lyle does not iterate over properties and register the table entries as valid if they match. Br. 20. According to Appellant,

Lyle only reschedules the event if a conflict occurs. *Id.* Appellant's argument (*id.*) is persuasive.

Lyle's system resolves conflicts between events in an electronic calendar. Lyle ¶ 1. In paragraph 10, Lyle's component determines if there is a conflict between one calendar event and another scheduled earlier. *Id.* ¶ 10, *cited in* Ans. 10. Apart from disclosing that a component is configured to perform this determination, paragraph 10 does not expressly disclose that the system does so using a mapping table with the recited registrations. *See* Lyle ¶ 10. Instead, Lyle only discloses that a component notifies the sender about the recipient's conflict. *Id.*; *accord* Br. 20.

Furthermore, the rejection lacks an explanation of how Lyle's component inherently registers based on matching properties, or must do so using the recited table. *See* Ans. 10; *see also* Final Act. 10. Although the Examiner explains that Lyle's system is automatic (Ans. 15–16), this explanation does not address how Lyle necessarily registers entries in a table as recited (*see* Br. 20). Accordingly, the Examiner has not shown that Lyle inherently or expressly discloses using or registering anything in a table in the manner recited in steps (j), (k), and (l).

We take no position on whether these steps would have been obvious in view of Lyle. The question before us is whether Lyle anticipates the claims under section 102. And on this record, the Examiner's anticipation rejection cannot be sustained for the reasons discussed in this section.

Therefore, we are constrained by this record to find that the Examiner erred in rejecting claims 1, 7, 13, and 19 as anticipated by Lyle (*see* Ans. 6–12), and in rejecting dependent claims 4–6, 10–12, and 14–18 for similar reasons.

### CONCLUSIONS

We affirm the Examiner's rejection of claims 1, 4–7, and 10–19 under § 101.

We reverse the Examiner's rejection of claims 1, 4–7, and 10–19 under § 102(b).

### DECISION

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, the Examiner's decision is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED